

U.S. Patents are organized by class and sub-class as part of the U.S. Patent Classification (USPC)

- **A preliminary U.S. patent search is ideally a classification search of granted U.S. patents and published U.S. patent applications conducted to determine patentability of an invention**

Patent Searching by Class/Subclass Basics

First, click on “Patents” at the USPTO homepage



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The USPTO's 2013 Annual Report is Now Available

Our annual Performance and Accountability Report for 2013 is out and we invite you to read about our agency's accomplishments over the last fiscal year.

Performance & Accountability Report

Fiscal Year 2013

The Director's Forum
A blog from USPTO's leadership



Patent Litigation
Online Toolkit

>> patents

>> trademarks

Then click on “Patent Classification”



The screenshot shows the uspto.gov website. The header features the uspto.GOV logo, the text "The United States Patent and Trademark Office an agency of the Department of Commerce", and search bars for patents and trademarks. A navigation bar lists various categories: PATENTS | TRADEMARKS | IP LAW & POLICY | PRODUCTS & SERVICES | INVENTORS | NEWS & NOTICES | FAQs | ABOUT US. Below this, a breadcrumb trail reads "Home Page » PATENTS". The left sidebar contains a list of links: Patent Search, Patent Process, Patent Classification (highlighted with a red arrow), Patent Forms, Litigation, Statistics, Electronic Business Center, Patent Laws, Regulations, Policies & Procedures, Resources and Guidance, Office of Data Management, Announcements, Initiatives & Events, and International Protection. The main content area is titled "Patents" and includes a section "What is a patent?" with a definition and types of patents (Utility, Design, Plant). It also features a section "First-time filers, start here" with links to brochures and guides, and a section "Patent Tools and LINKs" with a search bar.

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Patents

What is a patent?

A patent is an intellectual property right granted by the Government of the United States of America to an inventor "to exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States" for a limited time in exchange for public disclosure of the invention when the patent is granted.

There are three types of patents. [Utility patents](#) may be granted to anyone who invents or discovers any new and useful process, machine, article of manufacture, or composition of matter, or any new and useful improvement thereof. Here is the [process for obtaining a utility patent](#). [Design patents](#) may be granted to anyone who invents a new, original, and ornamental design for an article of manufacture. [Plant patents](#) may be granted to anyone who invents or discovers and asexually reproduces any distinct and new variety of plant.

View the different [types of patent applications](#).

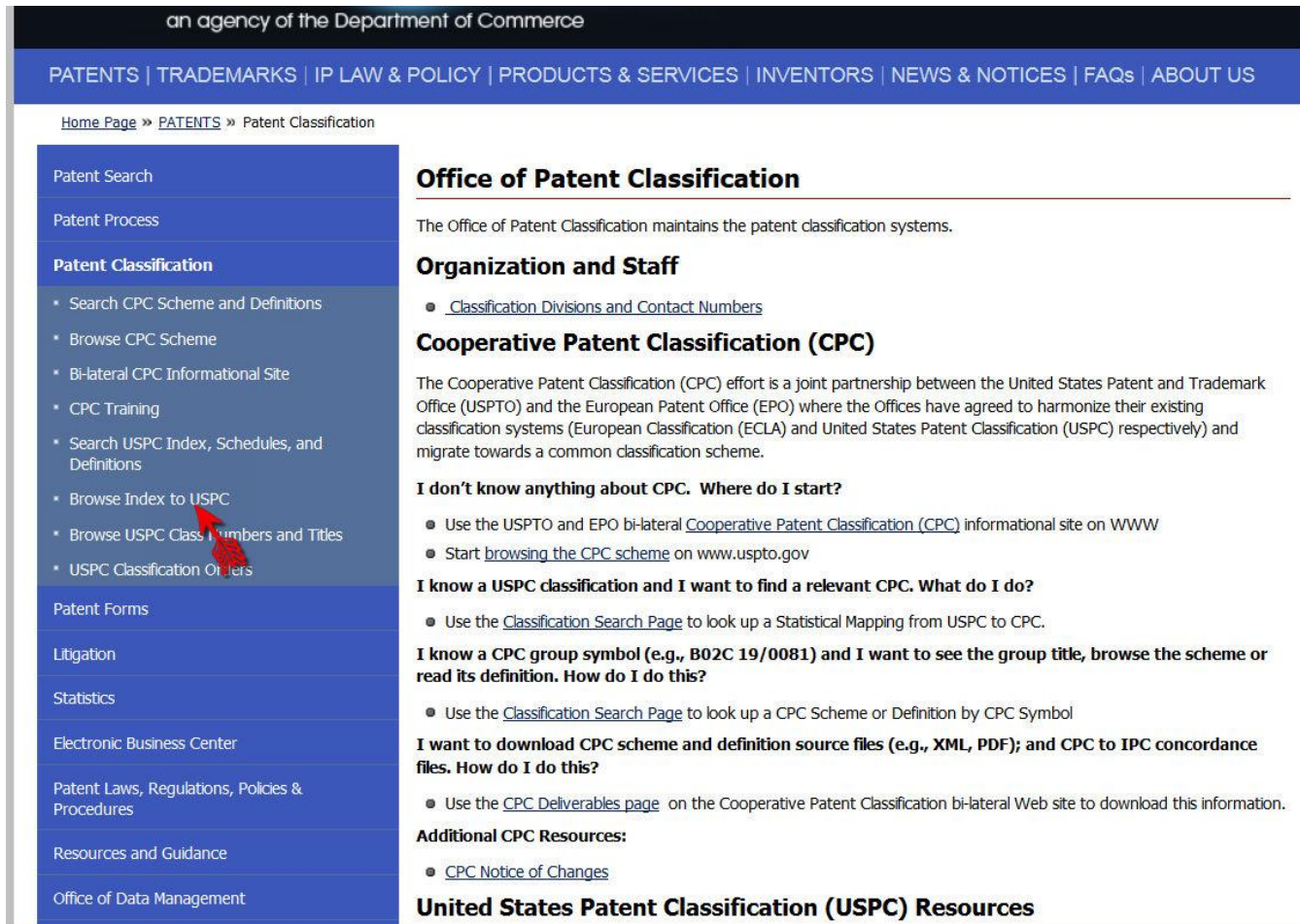
First-time filers, start here

Learn general information concerning patents in our [online brochure](#) or through this [downloadable and printable guide \(PDF\)](#). See also resources for [filing for a patent online](#). First time online filers may also contact the [Patents Electronic Business Center](#) for assistance.

Patent Tools and LINKs

 Search for a patent, search patent owners (assignments), and our attorney

Then click on “Browse Index to USPC”



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Home Page » PATENTS » Patent Classification

Patent Classification

- Patent Search
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- Patent Classification**
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Office of Patent Classification

The Office of Patent Classification maintains the patent classification systems.

Organization and Staff

- [Classification Divisions and Contact Numbers](#)

Cooperative Patent Classification (CPC)

The Cooperative Patent Classification (CPC) effort is a joint partnership between the United States Patent and Trademark Office (USPTO) and the European Patent Office (EPO) where the Offices have agreed to harmonize their existing classification systems (European Classification (ECLA) and United States Patent Classification (USPC) respectively) and migrate towards a common classification scheme.

I don't know anything about CPC. Where do I start?

- Use the USPTO and EPO bi-lateral [Cooperative Patent Classification \(CPC\)](#) informational site on WWW
- Start [browsing the CPC scheme](#) on [www.uspto.gov](#)

I know a USPC classification and I want to find a relevant CPC. What do I do?

- Use the [Classification Search Page](#) to look up a Statistical Mapping from USPC to CPC.

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- Use the [CPC Deliverables page](#) on the Cooperative Patent Classification bi-lateral Web site to download this information.

Additional CPC Resources:

- [CPC Notice of Changes](#)

United States Patent Classification (USPC) Resources

That takes one to an alphabetical index. I tried “C” for compost but didn’t find anything. So then I tried “F” for fertilizer.

[s, and Manuals](#) > [Classification](#) > Index to the USPC

[Class Numbers Only](#) | [USPC Index](#) | [International](#) | [HELP](#) | [Office of Patent Classification](#)

Index to the United States Patent Classification (USPC) System

[o the USPC](#)

and section (by letter) ...

[Index in HTML](#)

[Index in PDF](#)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y

KEY: =online business system =fees =forms =help =laws/regulations =definition (glossary)

Center is available to help you on patent matters. Send questions about USPTO programs and services to the [USPTO Contact Center \(UCC\)](#). You can suggest USPTO webpages or material you would like featured on this section by E-mail to the [webmaster](#). Your suggestions will be considered and may lead to other improvements on the website.

[HOME](#) | [SITE INDEX](#) | [SEARCH](#) | [eBUSINESS](#) | [HELP](#) | [PRIVACY POLICY](#)

Once in the F's I could scroll all the way down to "Fertilizer" or do a "Edit" then "Find" in my browser and type in "fertilizer" and search the page. It turns out that under "fertilizer" per se, there wasn't anything like I was looking for. But under "**Fermenting**" there was an entry for Fertilizers with the USPC Class number 71 and Subclasses 8+. Click on the 8+

Stove	126 / 201+
Vehicle	293
Design	D12 / 186
Magnetic fender securing device	293 / DIG 6
Pusher attachment for tractors	293 / DIG 1
Ferment	
Medicine containing	424
Fermenting	435
Animal foods	426 / 53
Apparatus	435 / 283.1+
Beverages	426 / 7+
Apparatus	99 / 275+
Fertilizers	71 / 8+
Tobacco treatment	131 / 30+
Ferments Acclimatization	435 / 245
Ferris Wheel	472 / 45+
Ferrocenes	556 / 143+
Ferrocyanogen Compounds	423 / 364+
Ferroelectric	
Battery	136 / 254
Information storage and retrieval	
Interconnection	365 / 65
Radiant energy	365 / 117
Photoconductivity and	365 / 109
System with particular element	365 / 145
Ferrous Alloys	
Composition	420 / 8+

There are several subclasses under Class 71 (Fermentation) that might be related to compost. They will probably all need to be researched. But for this example, let's choose subclass 21, Guano, stable manure, etc. If we click on the actual number 21, it will take us to a definition of subclass 21

-	A	P	8	..	Fermentation
	A	P	9	...	Aerobic
	A	P	10	...	Anaerobic
-	A	P	11	·	Organic material-containing
-	A	P	12	..	From sewage or night soil
	A	P	13	...	With other organic material
	A	P	14	..	From garbage
-	A	P	15	..	From animal matter
	A	P	16	...	Marine animals
	A	P	17	...	Blood
	A	P	18	...	Horn, hair, feathers, wool, leather, etc.
-	A	P	19	...	Bone
	A	P	20	....	With other organic matter
	A	P	21	...	Guano, stable manure, etc.
	A	P	22	...	With other organic material
-	A	P	23	..	From vegetation
	A	P	24	...	Peat, humus material, coal, etc.
-	A	P	25	..	From industrial wastes
	A	P	26	...	Sugar or distillery
-	A	P	27	..	From synthetic material
-	A	P	28	...	Urea and its derivatives
	A	P	29	....	With phosphorus-containing substances
	A	P	30	....	With nitrogen-containing substances
-	A	P	31	·	Inorganic material
-	A	P	32	..	Phosphorus-containing
	A	P	33	...	Phosphates
-	A	P	34	....	Alkali metal and ammonium only
	A	P	35	....	Nitrogen-containing
	A	P	36	....	Alkali metal- and ammonium-containing
-	A	P	37	....	Acid treatment

We can read the definitions of subclass 21 and also the definitions of other related subclasses.

-
- 21 Guano, stable manure, etc.:**
This subclass is indented under **subclass 15**. and including guano and animal excretions, generally, as the only types of animal matter present. Other organic fertilizer values, except animal matter below, may also be present.
- 22 With other organic material:**
This subclass is indented under **subclass 15**. Processes and products which include other organic values such as are classified hereinbelow.

SEE OR SEARCH THIS CLASS, SUBCLASS:

13, 20.
- 23 From vegetation:**
This subclass is indented under **subclass 11**. Processes and products, of preparing fertilizers from vegetable material; other organic values such as classified hereinbelow may also be present.
- 24 Peat, humus material, coal, etc.:**
This subclass is indented under **subclass 23**. Processes and products which include humus material, peat, lignite, coal and carbon. Other organic fertilizer values classifiable below may also be present.
- 25 From industrial wastes:**
This subclass is indented under **subclass 11**. Processes and products which include industrial wastes. Industrial wastes, within the meaning of this subclass, include ashes, cinders, paper, flue dust, paper manufacture, tanning liquors, corn steep liquors, gas liquor, etc.; in brief, any substance of organic origin ordinarily considered a waste material resulting from an industrial process and not otherwise provided for. Other organic fertilizer values, such as classified hereinbelow, may also be present.

SEE OR SEARCH THIS CLASS, SUBCLASS:

42, 43, for gas liquors used in alkaline treatment or neutralization of phosphates.
- 26 Sugar or distillery:**
This subclass is indented under **subclass 25**. Processes and products in which the industrial waste is from sugar manufacture or distillery wastes. The use of sugar is also included. Other organic fertilizer values classified hereinbelow or not otherwise provided for, may also be included.
- 27 From synthetic material:**
This subclass is indented under **subclass 44**. Processes and products which include synthetic organic fertilizers and the corresponding products.

If we click on the red “P” to the left of subclass 21, we will generate a list of all patents since 1790 under that subclass.

-			12	.. From sewage or night soil
			13	... With other organic material
			14	.. From garbage
-			15	.. From animal matter
			16	... Marine animals
			17	... Blood
			18	... Horn, hair, feathers, wool, leather, etc.
-			19	... Bone
			20	.... With other organic matter
			21	... Guano, stable manure, etc.
			22	... With other organic material
-			23	.. From vegetation
			24	... Peat, humus material, coal, etc.
-			25	.. From industrial wastes
			26	... Sugar or distillery
-			27	.. From synthetic material
-			28	... Urea and its derivatives
			29	.... With phosphorus-containing substances
			30	.... With nitrogen-containing substances
-			31	· Inorganic material
-			32	.. Phosphorus-containing
-			33	... Phosphates
-			34	.... Alkali metal and ammonium only

There have been 315 patents granted under Class 71/Subclass 21. We can view any of the patents by clicking on them. e.g. patent # 8,562,710 Fertilizer Composition

Searching US Patent Collection...

Results of Search in US Patent Collection db for:

CCL/71/21: 315 patents.

Hits 1 through 50 out of 315

Next 50 Hits

Jump To

Refine Search

CCL/71/21

PAT. NO.

Title

- 1 [8,641,797](#) **T** [Method for producing fulvic acid](#)
- 2 [8,623,110](#) **T** [Protein and isolated or purified amino acid product containing compositions and uses thereof](#)
- 3 [8,617,280](#) **T** [Compositions and methods for buffered growing media](#)
- 4 [8,597,394](#) **T** [Organic containing sludge to fertilizer alkaline conversion process](#)
- 5 [8,562,710](#) **T** [Fertiliser composition](#)
- 6 [8,557,013](#) **T** [Bioorganically-augmented high value fertilizer](#)
- 7 [8,518,428](#) **T** [Antagonistic bacteria for controlling the Fusarium wilt of continuous cropping banana and their microbial organic fertilizer](#)
- 8 [8,506,670](#) **T** [Micronutrient fertilizers and methods of making and using the same](#)
- 9 [8,491,692](#) **T** [Dispersable potash granule](#)
- 10 [8,435,321](#) **T** [Water-dispersible pellets](#)
- 11 [8,425,648](#) **T** [Slow calcium release fertilizer](#)
- 12 [8,361,186](#) **T** [Biochar](#)
- 13 [8,282,827](#) **T** [System and method for producing methane, an organic based fertilizer and usable water from animal waste](#)

That will take us to a text version of the patent. Note the entries after “Current U.S. Class” This patent is listed under a number of U.S. Class/subclasses.
Also make note of the “Current CPC Class” entries. That will be important later when we want to search for patents from other countries.

PCT Pub. Date:		April 29, 2010
Prior Publication Data		
<u>Document Identifier</u>	<u>Publication Date</u>	
US 20110314882 A1	Dec 29, 2011	
Foreign Application Priority Data		
Oct 24, 2008 [AU]	2008905521	
Current U.S. Class:	71/11 ; 71/15; 71/17; 71/21; 71/23	
Current CPC Class:	C05F 1/002 (20130101); C05G 1/00 (20130101); C05G 3/04 (20130101); C05G 3/08 (20130101); C05F 1/002 (20130101); C05F 1/005 (20130101); C05F 3/00 (20130101); C05F 11/00 (20130101); B01J 2220/68 (20130101); C05F 3/02 (20060101); C05F 11/00 (20060101); 71/11-30	
Current International Class:		
Field of Search:		
References Cited [Referenced By]		
U.S. Patent Documents		
5772721	June 1998	Kazemzadeh
5785730	July 1998	Miknevich et al.
6409788	June 2002	Sower
6517599	February 2003	Gilbert
6829860	December 2004	Lee et al.
7213366	May 2007	Ahm
2003/0205072	November 2003	Van Der Merwe
2004/0011102	January 2004	Sears
2004/0069031	April 2004	Krusiak et al.

In the text version of the patent, we can also click on “Images” at the top of the record, to get the actual patent record with images. Not all patents will have images.

Important parts of the patent record are the “Specifications” that describe what is being patented – and the “Claims” that claim what the patent will do

USPTO PATENT FULL-TEXT AND IMAGE DATABASE



(5 of

United States Patent
Palmer, et al.

8,562
October 22, 2

Fertiliser composition

Abstract

This invention relates to a storage stable fertilizer composition in the form of pellets or granules comprising an organic fertilizer in admixture with a water absorbent polymer. This invention also relates to a process for producing a storage stable fertilizer composition, the process comprising: i) mixing an organic fertilizer and a water absorbent polymer to form a mixture; ii) pelletizing or granulating the mixture; and iii) drying the pellets or granules for a time and under conditions sufficient to form a storage stable fertilizer composition.

Inventors:	Palmer; Scott Andrew (New South Wales, AU), Scott; Nicole Joanne (New South Wales, AU), White; James Matthew (New South Wales, AU)			
Applicant:	Name	City	State	Country Type
	Palmer; Scott Andrew	New South Wales	N/A	AU
	Scott; Nicole Joanne	New South Wales	N/A	AU
	White; James Matthew	New South Wales	N/A	AU
Assignee:	Duluxgroup (Australia) Pty Ltd. (Victoria, AU)			
Family ID:	47118854			

If we go back to the Class 71 list and click on the blue “A” to the left of 21, we can generate a list of patents still in the application process. Some will have been abandoned. Some will still be actively in the application process.

-	A	P	8	..	Fermentation
	A	P	9	...	Aerobic
	A	P	10	...	Anaerobic
-	A	P	11	·	Organic material-containing
-	A	P	12	..	From sewage or night soil
	A	P	13	...	With other organic material
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	A	P	35	Nitrogen-containing
	A	P	36	Alkali metal- and ammonium-containing
-	A	P	37	...	Acid treatment
	A	P	38	Gaseous
	A	P	39	Nitric and hydrochloric

There are 64 applications for patents under Class 71/Subclass 21

Searching PGPUB Full-Text Database...

Results of Search in PGPUB Full-Text Database for:

CCL/"71"/21: 64 applications.

Hits 1 through 50 out of 64

Final 14 Hits

Jump To

Refine Search

CCL/"71"/21

PUB. APP. NO.	Title
1 20140041431	METHOD OF REDUCING ATMOSPHERIC AMMONIA IN LIVESTOCK AND POULTRY CONTAINMENT FACILITIES
2 20140011675	AGRICULTURAL COMPOSITIONS AND APPLICATIONS UTILIZING MINERAL COMPOUNDS
3 20130316903	Solid Plant Nutrient Compositions
4 20130283872	ORGANIC LIQUID FERTILIZER AND PROCESS OF MAKING
5 20130255339	PROCESS FOR REDUCING WATER SOLUBLE ELEMENTS USING AN AMENDED ANIMAL MANURE FERTILIZER (
6 20130239634	VEGETATION BASE SOIL AND A METHOD FOR GROWING VEGETATION ON A SLOPED SURFACE
7 20130186155	METHOD FOR TREATING ANIMAL WASTE
8 20130125599	RECOVERY OF PHOSPHOROUS FROM POULTRY LITTER
9 20130123103	BIOSOLID STORAGE AND DISPERSAL
10 20130074556	TETRA VERMI BED AND A PROCESS FOR COMPOSTING AGRICULTURAL WASTE
11 20130055635	PLANT PROPAGATION MEDIUM AND METHODS OF MAKING AND USING IT
12 20130023417	Urea formaldehyde polymer additive for odor control of unmanipulated manure
13 20130019645	ORGANIC LIQUID FERTILIZER AND PROCESS OF MAKING

Researching Prior Art

(To make sure someone has already Invented Your idea)

- **U.S. Patents and published patent applications**
- Foreign Patents and published patent applications
- Journal and magazine articles
- Books, manuals, and catalogs
- Websites
- Conference proceedings
- Scientific papers

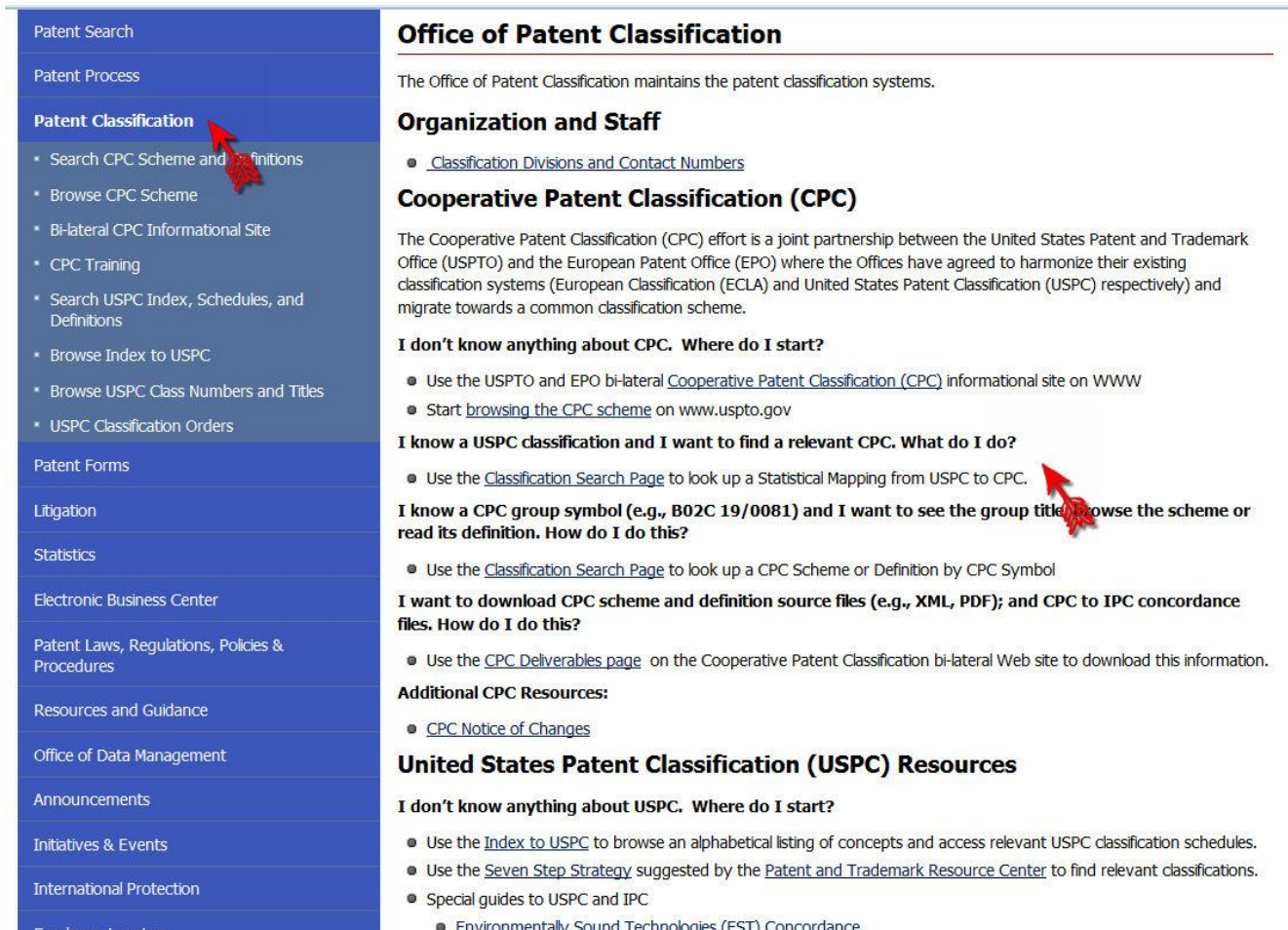
Foreign patents – you will also want to search these

- The U.S. is switching from its U.S Patent Classification (USPC) system to a Cooperative Patent Classification (CPC) that other most all countries have agreed to use.
- There is also an International Classification System (IPC) that is switching to CPC.
- So CPC is a combination of USPC and IPC
- You will need CPC numbers to search for international patents.

On those U.S. patents that you already looked at, they contained CPCs for that patent. That would be one way to obtain CPCs for your ideal to use to search for international patents. Each U.S. patent contained a listing of Current CPC Class numbers.

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Patent Search

Patent Process

Patent Classification

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Additional CPC Resources:

- [CPC Notice of Changes](#)

United States Patent Classification (USPC) Resources

I don't know anything about USPC. Where do I start?

- Use the [Index to USPC](#) to browse an alphabetical listing of concepts and access relevant USPC classification schedules.
- Use the [Seven Step Strategy](#) suggested by the [Patent and Trademark Resource Center](#) to find relevant classifications.
- Special guides to USPC and IPC
 - [Environmentally Sound Technologies \(EST\) Concordance](#)

We want to convert a USPC to a CPC. So we check USPC. Then enter our USPC Class and Subclass of 71 / 21 Then we choose Statistical Mapping from USPC to CPC and hit Submit

The United States Patent and Trademark Office
an agency of the Department of Commerce

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Main	CPC Sections	USPC Class Numbers & Titles	USPC Class Numbers	Classification Search Page	Contacts	Help
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Access Classification Information by Symbol

Select Classification System: ☐ CPC ☒ USPC

Enter Classification symbol: /
e.g., 482/1 or D14/314

Select output format: ☒ HTML ☐ PDF

Select Content:

- Schedule
- Definitions
- Statistical Mapping from USPC to CPC**
- USPC to IPC Concordance
- USPC to LOCARNO (for Designs)

Clear Submit

That will generate the three most closes CPCs that match the USPC of 71/21. If one clicks on “more...” they will get two more CPC’s. One should copy and or write down those CPC numbers.

For our example we will use the first one C 05F 3/00

However take the spaces out of it and make it **C05F3/00**

71/15	C 05F 3/00	A 23K 1/106	C 05F 11/00 more...
71/16	C 05F 1/002	C 05B 7/00	C 05D 3/00 more...
71/17	C 05F 1/005	C 05D 9/02	C 05F 1/00 more...
71/18	C 05F 1/005	C 05F 1/007	C 05B 1/00 more...
71/19	C 05B 17/00	C 05B 3/00	C 05D 3/00 more...
71/20	C 05B 11/08	C 05F 1/005	C 07C 273/06
71/21	C 05F 3/00	C 05D 9/02	A 01C 3/00 more...
71/22	C 05F 3/00	C 05B 17/00	C 05C 9/02 more...
71/23	C 05F 11/00	C 05D 9/02	C 05D 9/00 more...
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71/34	C 05B 7/00	C 05B 13/06	C 01B 25/28 more...
71/35	C 05B 7/00	C 05B 11/06	C 01B 21/082 more...
71/36	C 05B 7/00	C 05B 13/06	C 05B 17/00 more...
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Publication number: ⓘ WO2008014520


Application number: ⓘ DE19971031696

Priority number: ⓘ WO1995US15925


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Applicant(s): 

Institut Pasteur


Inventor(s): 

Smith

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☐ 1. New Nitrification Inhibitors And The Use Of Polyacids To Treat Mineral Fertilizers Containing A Nitrification Inhibitor

★ Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
		C05F3/00	C05F3/00	KR20040101565 (A)	1996-08-06
		C05G3/08	C05G3/00	2004-12-02	
		C07D231/12	C05G3/08	KR100515868 (B1)	
		(+4)	(+5)	2005-09-21	

☐ 2. A METHOD FOR REMOVING AMMONIUM NITROGEN FROM ORGANIC WASTE WATER COMPRISING LIQUID MANURE

★ Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
WENNERGREEN BO [SE]	RE N TECHNOLOGY APS [DK]	B01D2311/04	B01D15/04	KR20140007785 (A)	2010-07-09
CHRISTENSEN JENS		B01D2311/2623	C02F1/42	2014-01-20	
TRADSBOG [DK]		(+21)	C02F1/58		
			(+1)		

☐ 3. NUTRIENT RECOVERY METHODS AND USES THEREOF

★ Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
ZENG LE LARRY [CA]	HIMARK BIOGAS INC [CA]	C02F11/14	B01D21/00	KR20140000236 (A)	2010-09-29
LI XIAOMEI [CA]		C05F17/0027	B01D37/02	2014-01-02	
		C05F17/0288	B01D43/00		
		(+1)	(+2)		

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The screenshot displays the Espacnet Advanced Search interface with several search criteria entered. Two red arrows point to the input fields for 'straw' and 'C05F3/00'.

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Title or abstract	hair
straw	
Publication number	WO2008014520
Application number	DE19971031696
Priority number	WO1995US15925
Publication date	yyyymmdd
Applicant(s)	Institut Pasteur
Inventor(s)	Smith
CPC	C05F3/00
IPC	H03M1/12

That narrowed my results down to 43 patents.

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straw in the title or abstract AND **C05F3/00** as the Cooperative Patent Classification

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page 1

Sort by Sort order

☐ 1. **Method for waste removal and recycling of spill manure incoming in riding stables, involves cleaning wet urea-content wooden shavings contained in litter of horse droppings in sieve cylinder device**

★

Inventor:
DIEDERICHSMIEIER
JULIE-MYNOU [DE]

Applicant:
DIEDERICHSMIEIER
JULIE-MYNOU [DE]

CPC:
C05F11/00
C05F3/00
(+1)

IPC:
A01K1/01

Publication info:
DE102010018062 (A1)
2011-10-27

Priority date:
2010-04-22

☐ 2. **Method and apparatus for treating liquid sewage and waste**

★

Inventor:
LEBO WILLIS R

Applicant:
LEBO WILLIS R

CPC:
A61L11/00
C02F1/50
C02F11/16
(+6)

IPC:
A61L11/00
C02F1/50
C02F11/16
(+5)

Publication info:
US3960718 (A)
1976-06-01

Priority date:
1974-08-05

☐ 3. **Farming method using waste material**

★

Inventor:
GUYOT JEAN-NOEL M [CA]
ROSSET RENE R [CA]

Applicant:
GUYOT JEAN NOEL M [CA]

CPC:
A01B79/02
A01C21/00
A01C23/047
(+7)

IPC:
A01B79/02
A01C21/00
A01C23/04
(+5)

Publication info:
US5755058 (A)
1998-05-26

Priority date:
1994-05-23